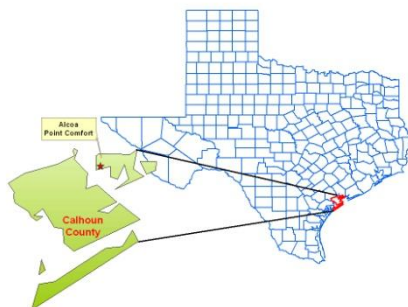


**ALCOA/LAVACA BAY  
CALHOUN COUNTY  
TEXAS**

**EPA ID# TXD008123168  
Site ID: 0601752**



**EPA REGION 6  
CONGRESSIONAL DISTRICT 14**

**Contact:  
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**Updated: September 2012**

## **Background**

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The Alcoa/Lavaca Bay Superfund Site is located in Calhoun County, Texas and consists of the Alcoa Point Comfort Operations (PCO) Plant, Dredge Island, portions of Lavaca Bay, Cox Bay, Cox Creek, Cox Cove, Cox Lake and western Matagorda Bay. The PCO Plant is located on the south side of State Highway 35 near the City of Point Comfort, Texas and is adjacent to Lavaca Bay on the west and Cox Creek/Cox Lake on the east.

The Plant, which covers approximately 3,500 acres, was established as an aluminum smelter in 1948. Smelting operations were shut down in 1980. Bauxite refining, which utilizes bauxite ore to produce alumina, began in 1958 and is still active today. Past operations that have been dismantled and removed include the smelter, a cryolite plant, a chlor-alkali plant, and the Witco coal tar processing plant. From 1966 until 1979, Alcoa operated a chlor-alkali production plant to produce sodium hydroxide (caustic) and chlorine. Part of the chlor-alkali process involved the use of mercury cathodes. The main purpose of operating the chlor-alkali plant was to produce caustic that was necessary in the bauxite refining operations. Between 1966 and 1970, wastewater from the chlor-alkali plant that contained mercury, was transported to an offshore gypsum lagoon located on Dredge Island. After a settling period, the overflow from the gypsum lagoon was discharged to Lavaca Bay from two outfalls on Dredge Island.



The Texas Department of Health (TDH), now the Texas Department of State Health Services (TDSHS) has sampled fish, crabs, and oysters since the 1970s. On April 20, 1988, TDH issued an order closing an area of approximately 1 square mile of Lavaca Bay to the taking of finfish and crabs. On January 13, 2000, TDH reopened a portion of the closure area (Cox Bay). The closure for Cox Bay was removed because sampling showed that levels of mercury in finfish and crabs had decreased to a level acceptable for human consumption based on TDH's risk characterization.

EPA signed the Record of Decision (ROD) for the Site on December 20, 2001. The ROD set forth the

selected remedy for the Site, which included actions to address mercury- and PAH- contaminated sediments in Lavaca Bay, ongoing unpermitted discharges of mercury and PAHs into Lavaca Bay, soil contamination at the former Chlor-alkali Process Area, and soil contamination at the former Witco area.

## Current Status

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EPA completed the first Five Year Review for the Site in June 2011. The purpose of the Five Year Review is to determine if the remedial action is still protective of human health and the environment and functioning as built. The Five Year Review determined that the remedy implemented at the Site currently protects human health and the environment. In order for the remedy to remain protective in the long term, the report identified four recommendations that need to be implemented.

Alcoa submitted the 2011 annual remedial action effectiveness report to EPA in March 2012. The 2011 annual report evaluates the results from performance monitoring conducted during 2011 and assesses the progress made towards meeting the remediation goals.



The Preliminary Close Out Report (PCOR) for the Alcoa/Lavaca Bay site was signed on July 23, 2007. The PCOR documents that all construction activities required by the Record of Decision were completed. Long term monitoring of red drum and blue crab is required to evaluate the recovery of mercury levels in fish and shellfish.

## Benefits

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Cleanup measures should eventually result in the Texas Department of Health removing the Fish Closure order. This would enable the community to keep fish and shellfish from all areas of Lavaca Bay.

## National Priorities Listing (NPL) History

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NPL Proposal Date: June 23, 1993  
NPL Final Date: February 23, 1994

**Location:** The Aluminum Company of America (ALCOA) Point Comfort Operations (PCO) Plant is located in Calhoun County in southeast Texas near the City of Point Comfort. The Plant is bordered by Lavaca Bay on the west, Cox Creek/Cox Lake on the east, State Highway 35 on the northwest and industrial and agricultural areas on the north and northeast.

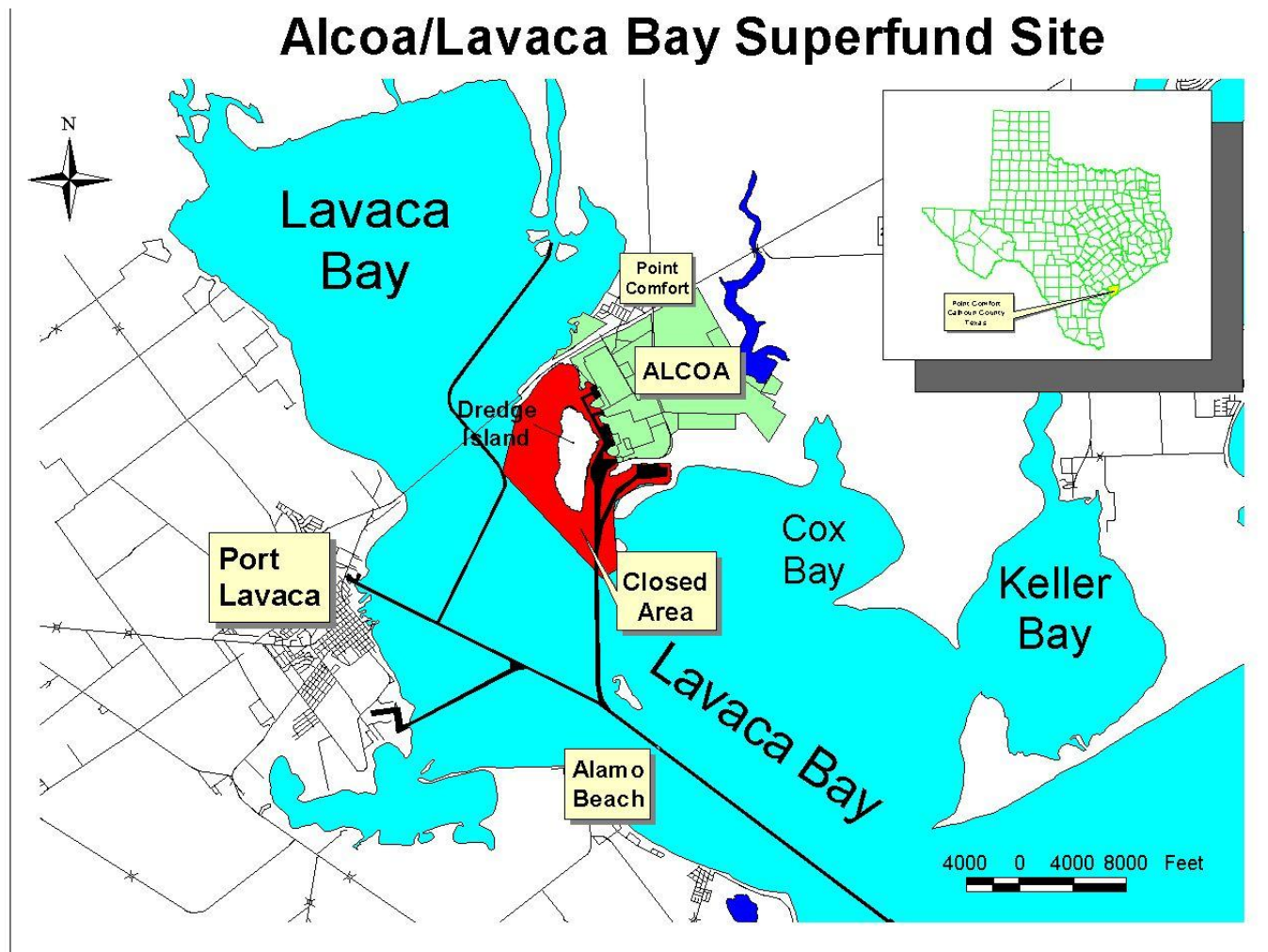
**Population:** Approximately 1,100 people live in Point Comfort, Texas, and 10,000 people live in Port Lavaca, Texas.

**Setting:** The Site consists of the ALCOA PCO Plant, an associated dredge spoil island, and portions of Lavaca Bay, Cox Bay, Cox Creek, Cox Cove, Cox Lake and western Matagorda Bay.

The ALCOA PCO plant covers approximately 3,500 acres and the dredge spoil island is approximately 420 acres. Lavaca Bay is an estuary of the Matagorda Bay system and

has several uses ranging from commercial and industrial to a natural habitat for aquatic and avian species.

## Site Map



## Wastes and Volumes

Chemicals of Potential Concern (COPCs) have been identified for the different areas investigated during the Remedial Investigation (RI). The major COPCs in Lavaca Bay sediments include mercury and Polycyclic Aromatic Hydrocarbons (PAHs).

As part of a non-time critical removal action on the dredge disposal island, Alcoa relocated approximately 523,000 cubic yards of mercury-contaminated dredge spoils into a fortified on-island disposal area. In addition, approximately 93,000 cubic yards of mercury-contaminated soils were removed from the island and placed in the fortified on-island disposal area.

During a treatability study, Alcoa dredged and disposed of approximately 80,000 cubic yards of mercury-contaminated sediments. It is estimated that approximately 2,300 pounds of mercury were removed from the Lavaca Bay system.

Remedial activities included dredging over 250,000 cubic yards of mercury-contaminated sediment from Lavaca Bay, installation of a dense non-aqueous phase liquid collection system, and capping of on-site waste areas.

## Health Considerations

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In April 1988, the Texas Department of Health (TDH) issued an order prohibiting the taking of finfish and crabs from a specific part of Lavaca Bay ("Closed Area") due to levels of mercury in fish tissue above Food and Drug Administration standards. In January 2000, the TDH reduced the size of the "Closed Area" based on reductions of mercury concentrations in fish tissue. The "Closed Area" is presented on the above site map.

## Record of Decision (ROD)

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EPA signed the Record of Decision on December 20, 2001.  
EPA signed an Explanation of Significant Differences on May 23, 2007

The ROD sets forth the selected remedy for the Site, which involves actions to address mercury- and PAH-contaminated sediments in Lavaca Bay, ongoing unpermitted discharges of mercury and PAHs into Lavaca Bay, and soil contamination at the former Chlor-alkali Process Area and soil contamination at the former Witco area. The selected remedy is a comprehensive approach for the Site and addresses all current and potential future risks caused by sediment and soil contamination.

EPA signed an Explanation of Significant Differences (ESD) on May 23, 2007. The ESD documented the difference of one component of the remedy selected in the December 2001 ROD and the final remedy constructed during the remedial action. Enhanced Natural Recovery was selected as part of the bay system remedy to help accelerate the natural recovery of sediment in open water areas of Lavaca Bay. Since the mercury remediation goal for sediment in the open water areas of Lavaca Bay has been met, there is no need to construct a thin-layer cap to accelerate natural recovery in the open water area of the bay. Therefore, Enhanced Natural Recovery North of Dredge Island is no longer a necessary component of remedial action for the site. None of the remedial actions required by the ROD for the Chlor-alkali Process Area and the former Witco area are being changed.

The major components of this remedy are:

### **Bay System**

- **Extraction and Treatment of Chlor-Alkali Process Area (CAPA) Ground Water** - CAPA ground water will be hydraulically controlled by a series of four extraction wells. Treatment of the extracted ground water will be performed by aeration using an air stripper followed by carbon adsorption for mercury removal. The treated ground water will be discharged to Lavaca Bay.
- **Installation of a DNAPL Collection or Containment System at the Witco Area** - West of the former Witco Tank Farm Area, a collection trench or containment system will be installed for the purpose of intercepting DNAPL potentially migrating to Lavaca Bay. Recovered DNAPL will be collected and sent off site for treatment and disposal at a licensed disposal facility. The DNAPL

will not be treated or stabilized on site prior to off site disposal. The specific areas of shoreline to be addressed by a remedy may be modified based on site conditions observed during remedy implementation. The use of either a DNAPL containment or collection technology will be refined during the remedial design.

- **Dredging of the Witco Channel** - Approximately 200,000 cubic yards of mercury-contaminated sediment will be dredged and disposed of in an on site confined disposal facility located on Dredge Island. The dredged sediments will not be treated or stabilized before disposal. A final cover for the disposal areas will consist of dredged material taken from an area of Lavaca Bay that has mercury concentrations below human health and ecological risk-based values.
- **Remediation of the Witco Marsh by Dredging or Filling** - the Witco Marsh would be actively remediated to address the concern of biological uptake of mercury. The decision to dredge or fill the marsh will be made in the remedial design.
- **Natural Recovery of Sediments** - Sediments that are not actively remediated will recover to acceptable levels through natural sedimentation. It is estimated that surficial sediment mercury levels in all areas are expected to decline to levels in the current range of open areas of the Bay within a 5 to 10 year time frame.
- **Institutional Controls to Manage Exposure to Finfish/Shellfish** - The fish closure originally established by the Texas Department of Health in 1988 and updated in January 2000 will remain in place to control the consumption of finfish and shellfish for the "Closed Area."
- **Monitoring** - Long term monitoring of sediments and fish will be required to confirm the natural recovery of sediment and fish tissue to acceptable levels. In addition, monitoring of surface water will be conducted to evaluate the effectiveness of the CAPA hydraulic containment system. Full details of the monitoring program will be established during the design of the selected Bay System remedy.

#### **Chlor-Alkali Process Area Soils**

- **Building R-300 Removal** - the walls and roof of Building R-300 will be removed and hauled off-site.
- **Capping of Building R-300 Area** - The building slab and the area immediately west of Building R-300 will be capped with a clay sublayer covered by crushed rock.
- **Institutional Controls to Manage Exposure to Soil** - Excavation of any soils below or immediately west of Building R-300 would only be permitted after a worker safety program is developed for the specific excavation activity and repair of the cap would be required after excavation. The Building R-300 area would be deed recorded as containing soils with elevated mercury levels.

#### **Former Witco Area Soils**

- **Capping** - The Stormwater Sump and Separator Area and Former Tank Farm Area will be capped with soil caps.
- **Institutional Controls to Manage Exposure to Soil** - Future excavation of any soils in these areas would only be permitted after a worker safety program is developed for the specific excavation activity and repair of the cap would be required after excavation. These areas would be deed recorded as containing soils with elevated PAH concentrations.

### **Community Involvement**

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Involvement Plan:	April 1995
Proposed Plan:	Issued June 21, 2001
Public Meeting:	June 28, 2001
Information Repository:	Calhoun County Public Library 200 West Mahan

Port Lavaca, TX 77979  
(361) 552-7323

## Site Contacts

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EPA Regional Public Liaison:	Donn Walters	214-665-6483
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EPA Superfund Region 6 Toll Free Number: 1-800-533-3508